

MIOMIR KORAC'  
Archaeological Institute  
Belgrade, Serbia  
misko@mi.sanu.ac.rs

904'652'(497.11)  
338.483.12:904'652'(497.11)  
COBISS.SR-ID 212283916

Original research article  
Received: January 17th 2014  
Accepted: February 15th 2014

## PRE – FEASIBILITY STUDY ITINERARIUM ROMANUM SERBIAE

### ABSTRACT

*The main idea of the project named “Itinerarium Romanum Serbiae – IRS” (hereinafter: the Project and/or “IRS”) is to improve and modernise existing infrastructure and other facilities on the route of Roman emperors, whereby the following would be enabled: linking all scientific cultural projects and routes related to Roman archaeology and Roman emperors both in Serbia and, if possible, internationally; a stronger foundation for further archaeological scientific research including the promotion of science; an opportunity for the further development of tourism in Serbia. The standardisation of these Roman sites, which are actually Roman Imperial cities, by the IRS would make it possible to attract at least 300,000 visitors per year and about EUR 300 million. With the opening and standardisation of these sites, foreign tourists would have the possibility to spend at least ten days in Serbia. In Germany only, there are about 400,000 highly educated tourists who are interested in this kind of tourism.*

**Keywords:** Roman Emperors, Cultural Routes, Serbia, Viminacium, Domus Scientiarum Viminacium, Sirmium, Singidunum, Pontes, Trajans bridge, Trajans road, Diana, Felix Romuliana, Šarkamen, Naisus, Iustiniana Prima, Itinerarium Romanum Serbiae, Roman Forts, Castrum.

### PROJECT BACKGROUND

In recent years, the Serbian government has made significant efforts in the field of science and scientific research. According to the new Science and Technological Development Strategy of the Republic of Serbia 2009-2014, Serbia plans

to increase and diversify R&D expenditure and to invest more than €300 million in the scientific infrastructure. As a result of these investments and other activities aimed at promoting scientific research, the total share of R&D expenditures in GDP should increase from cca. 0.3% GDP in 2009 – among the lowest in Europe – to more than 1%

---

\*This study was written in 2007, when it was assumed that the project itself would be adopted at the state level. In 2009, it was published as a monograph *Itinerarium romanum Serbiae* by the authors M. Korać, S. Golubović and N. Mrdjić which, in a unique and appealing way, gave background information on the importance of the area during late antiquity and the importance of the further development of the project. It is still the basis on which ideas and strategies related to the formation of the route and its future exploitation are developed. However, one should take into account that the project itself, in the optimal form in which it was conceived hasn't yet started. The only segment of the project that has been progressing according to plan is the Viminacium Archaeological Park, which uses it as a model for the future development and presentation of the site, as it was conceived in the conceptual phase of the project.

of GDP in 2014.

The largest part of the financing of the planned investment should be derived from international financial institutions, particularly the European Investment Bank (EIB). In March 2010, Serbia and the European Investment Bank signed a contract to finance a project concerning a series of investments aimed at revitalising public R&D in Serbia. These investments, spread throughout Serbia, include upgrading existing research facilities and infrastructure, creating a new scientific centre to promote science literacy among the general public, the construction of student and young scientist accommodation and upgrading the academic computer network. Specifically, the investment sub-projects include:

A. Adaptation of existing buildings and laboratories

B. The Petnica Science Centre and the Mathematics High School campus

C. New capital equipment for research

D. Human Resources Programme aimed at attracting some of the nearly 1,400 Serbian scientists currently working abroad

E. Centre for the promotion of science in Belgrade

F. The creation of Centres of Excellence in priority research fields; energy and energy efficiency, environmental protection and climate change, materials science and nanosciences, agriculture and food, biomedicine and information and communication technologies

G. Upgrade of the academic computer network and infrastructure for the “Supercomputing Initiative”

H. New apartment buildings for young researchers in Belgrade, Novi Sad, Niš and Kragujevac

I. The creation of Science and Technology parks in Belgrade, Niš, Novi Sad and Kragujevac

J. Infrastructure for the Ministry of Science and Technological development

The total value of the project is estimated at €420.8 million, out of which €200 million will come from the EIB loan, €25.6 million will be derived from the EU fund (IPA), while the remaining €195.2 million should be drawn from our own sources (the Serbian budget).

In addition to the EIB loan, in 2010, the Government of the Republic of Serbia signed a financing agreement with the Council of Europe Development Bank (CEB) for: (1) the purchase of research equipment for public research units and laboratories and (2) to build non-commercial rental housing for researchers with the goal of improving living conditions, particularly for younger researchers with a total value of €35 million. The total value of funds intended for these purposes are planned to be €130 million, out of which €95 million will be financed by the EIB loan.

In order to effectively manage the related projects, the Government of the Republic of Serbia passed a Decree on the establishment of the company “PIU Research and Development Ltd”, making it the key body responsible for the preparation and evaluation of tender invitations and coordination and other activities related to the implementation of the Research and Development in the Public Sector Projects.

Bearing in mind (1) the Government’s commitment to supporting scientific activities; (2) the strong resource base i.e. funds to be invested in scientific infrastructure; (3) recent achievements in the field of archaeological research in Serbia; (4) the potential spill over effects of the implementation of the proposed project relating to the promotion of archaeology as a science, the broader positive effects and the promotion of Serbia and (5) Serbia’s celebration of the 1,700<sup>th</sup> anniversary of the Edict of Milan in 2013, the Archaeological Institute of Belgrade, with the support of numerous relevant institutions in Serbia, nominated PIU Research and Development to fulfill the project named “Itinerarium Romanum Serbiae”, with the joint support of the Serbian government and external (EIB) funds.

## 1. PROJECT OVERVIEW

The project *Itinerarium Romanum Serbiae* – *IRS* was founded in 1996 by Dr Miomir Korać from the Archaeological Institute in Belgrade.

The main idea of the project named “Itinerarium Romanum Serbiae” (hereinafter: the “Project” and / or “IRS”) is to improve and modernise existing infrastructure and other facilities on the route of Roman emperors whereby the following would be enabled:

- The linking of all scientific cultural projects and routes related to Roman archaeology and Roman emperors, both in Serbia and, if possible, internationally;
- A stronger foundation for further archaeological scientific research, including the promotion of science;
- An opportunity for the further development of tourism in Serbia.

This would be achieved with the standardisation of archaeological sites along this Roman route, which would include five basic elements:

1. Each of the archaeological sites should be open for visitors 364/5 days per year. They should be closed only on the 1st of January.
2. Each site should have at least one covered object, in order to make the site functional and not have to rely on fair weather conditions.
3. Each site should always have at least one English speaking guide (with Serbian as their

mother-tongue).

4. Each site should have a souvenir shop and a tavern (lat. *taberna*), in which tourists would be able to purchase souvenirs and refreshments.

5. Each site should have toilet facilities with at least ten cubicles.

The standardisation by the IRS of these Roman sites, actually Roman Imperial cities, would make it possible to attract at least 300,000 visitors per year and generate about €300 million turnover. With the opening and standardisation of these sites, foreign tourists would have the possibility to spend at least ten days in Serbia.

In Germany only, there are about 400,000 highly educated tourists who are interested in this kind of tourism.

During the project, planned to be completed by the end of 2014, 11 archaeological sites in Serbia will be modernised and adjusted to enable further scientific research and cultural and touristic promotion of Serbia as the birthplace of 18 Roman emperors. According to the agreement with EIB, the Project should be classified as component E – science promotion in Serbia.

### International Viminacium Projects:

1. T-PAS, an international project, connecting *Aquileia* (northern Italy), via *Emona* (Ljubljana), to *Viminacium*, aiming to promote this tourist

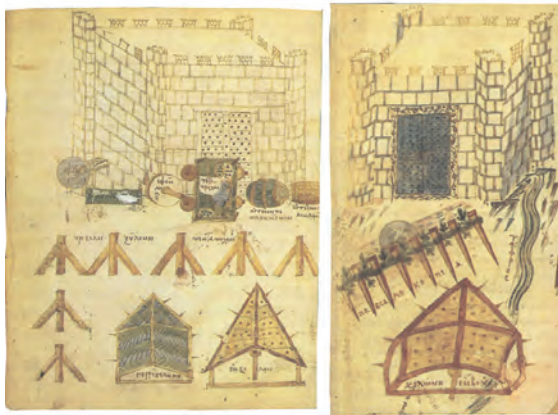


Fig. 1 Roman siege machines



Fig. 2 Map of the Ptolemy, drawing according to original copy of the Roman map

route. The value of the project is €448,000.

2. OPENARCH, an international project of the Archaeological Open Air Museums (AOAMs), connecting Viminacium, actually Serbia, with eleven partners from seven countries (Sweden, Great Britain, the Netherlands, Germany, Finland, Italy, Spain). The value of the project is €2,500,000. Viminacium hosted the participants in 2014.

3. DANUBE LIMES BRAND, a project connecting Austria, Hungary, Slovakia and Serbia by placing Roman towns and forts under common UNESCO protection. The value of the project is in excess of €1,200,000.

4. Ionic-Adriatic Initiative, a project connecting Viminacium with Ancona and Bologna. It is currently being evaluated by the Commission of the European Union. The value of the project is in excess of €3,000,000.

The project is planned to consist of the modernisation and (re)construction of infrastructure and facilities at 11 different archaeologically important sites: (1) *Sirmium*, (2) *Viminaci-*

*um*, (3) *Tabula Traiana*, (4) Trajan's Bridge, (5) Šarkamen, (6) *Mediana et Naissus*, (7) *Iustiniana Prima*, (8) *Diana*, (9) Kale Krševica, (10) Hisar and (11) Drenovac. In addition, the project should include the reconstruction of the Roman road, the construction of 18 busts of Roman emperors and the construction of road signs along the route. A detailed description of the sites and their archaeological importance is presented in part 2.

The project is not planned as a local cultural route, rather as an international project linking all scientific and cultural projects and routes related to Roman archaeology and Roman emperors in Serbia. The local cultural route plan is already emphasised on the main project map where routes to the closest and most important related Roman cities are marked. The project is, nevertheless, open to international cooperation. The Roman Empire was a predecessor of the European Union, but modern borders do not correspond with the Roman provinces. Due to that fact, projects related to the Roman era should not be viewed through present day "national filters", which could narrow

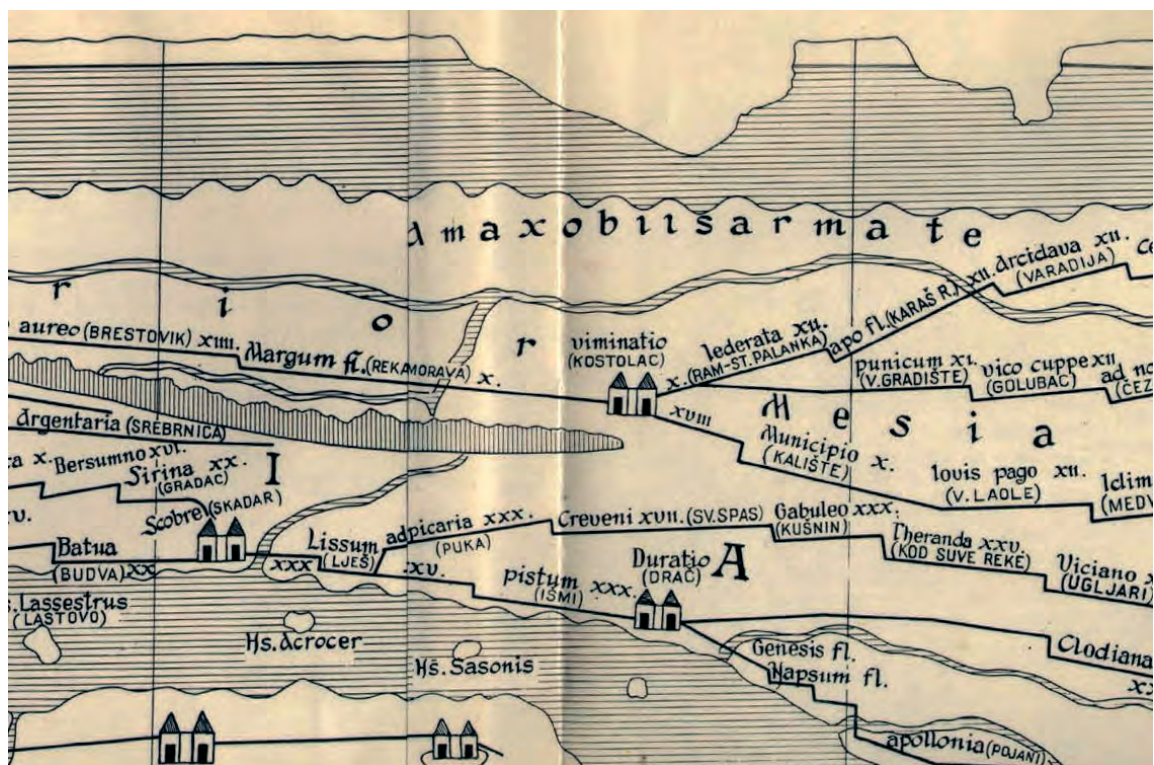


Fig. 3 *Tabula Peutingeriana*, drawing according to original copy of the Roman map

.. <i>Sirmium</i> .....	731,000
.. <i>Viminacium</i> .....	4,341,228
.. <i>Tabula Traiana</i> .....	1,006,093
.. Roman Road .....	384,605
.. Trajan's Bridge .....	2,307,291
.. Holographic View of Trajan's Bridge .....	1,260,000
.. Šarkamen .....	678,830
.. <i>Mediana et Naissus</i> .....	1,015,371
.. <i>Iustiniana Prima</i> .....	417,000
.. <i>Diana</i> .....	337,616
.. Kale-Krševica .....	260,646
.. Hisar .....	28,000
.. Drenovac .....	847,785
.. 18 heads of Roman emperors .....	58,000
.. Road signs along the route .....	50,000
<b>Total costs</b>	<b>13,723,465</b>

Table 1 Estimated Investments / Costs per Archaeological Site, in €  
Source: Archaeological Institute Belgrade

the presentation and vision of the Roman Empire and its Emperors. A complete presentation of the Roman heritage could only be achieved through international cooperation, a fact proven by many previous exhibitions. Thematic exhibitions, such as “Constantine the Great” in Trier, “Hadrian Empire and Conflict” in London, “Rome and Barbarians” in Venice etc., prove that an international vision of the empire is essential to understanding our past.

Roman cities, such as *Aquincum*, *Sopianae*, *Intercissa*, *Mursa*, *Siscia*, *Spalato*, *Pola*, *Emona*, *Poetovio*, *Nicopolis*, *Oescus*, *Ratiaria*, *Sarmizegetusa*, *Apulum*, *Doclea*, *Scupi*, *Heraclea*, *Stobi*, *Athena*, *Sparta*, *Olympia*, *Pompeii*, *Neapolis* and finally Rome, are sites which leave this project unfinished if they are not connected in one major cultural route. Only a project planned in a Roman perspective can achieve the full presentation of its cultural heritage. Only by finally connecting our sites to cities such as *Mediolanum*, *Trier* and *Nicomedia* can we fully present the Tetrarchial Age of Rome and the beginnings of Christianity's

domination.

Project *Itinerarium Romanum Serbiae* is an international project of multiple levels and with multiple goals:

- It is planned as a combined project of science and culture using the latest methods in research.
- It is intended to revive and connect ancient Roman roads, of which many correspond to present day communications.
- A network of 100 boarding houses, replicas of Roman villas (*villa rustica*), resting places (*mutatio*) and motels (*mansio*) is planned to be built on this route.
- The aim is to employ the local population, according to a system of small, family run businesses. Boarding houses would employ 800 people.
- A further four times as many people (3,000-4,000) are planned to be employed in the business support of these boarding houses in the form of catering and souvenir production. They would be located in the natural en-

	2014p	2015p	2016p	2017p	2018p
<b>Inflow</b>	<b>648</b>	<b>918</b>	<b>1,008</b>	<b>1,098</b>	<b>1,188</b>
from tickets	440	620	680	740	800
from souvenirs	208	298	328	358	388
other	0	0	0	0	0
<b>Outflow</b>	<b>622</b>	<b>889</b>	<b>977</b>	<b>1,065</b>	<b>1,152</b>
Merchandise for resale	176	253	278	304	329
Material costs	45	64	71	77	83
Salaries	310	417	458	504	555
Marketing costs	50	50	50	50	50
Maintenance / reserves	40	105	120	130	135
<b>Net cash</b>	<b>26</b>	<b>29</b>	<b>30</b>	<b>33</b>	<b>35</b>

Table 2 Preliminary Cash Flow Analysis, in €000

Source: Archaeological Institute Belgrade

vironment, such as in forests, crop fields and pastures, and would mostly be along the rivers Sava, Danube, Morava and Timok.

#### Focal points of the project include:

- Science promotion: so far, much effort has been put into exploring all scientifically important issues. However, there is room for further investigation and this project should increase the foundation for such developments.

- Thematically linking all similar archaeological sites in this country and abroad.

- Development of the economy and tourism through: (1) the production of souvenirs, (2) the employment of new workers on sites and archaeological parks, (3) 100 boarding houses en route, in order to provide accommodation for visitors, (4) the building and development of local infrastructure and other.

- Improving the standard of local communities through: (1) special attention being paid to the economical development of poor regions (Southern and Eastern Serbia); (2) the development of small local industries and family workshops; (3) the revival of old craftsmanship, which ceased due to economic crises; (4) the rising stan-

dard of local communities

- Development of archaeological tourism on the national level.

- Promotion of national treasures and reputational improvement of the Republic of Serbia, especially focused on the celebration of the 1,700<sup>th</sup> anniversary of the Edict of Milan.

Total cost of the project is estimated at €13,723,465 with distribution as follows.

Estimated investments / costs do not include VAT, in accordance with the agreement signed with EIB.

Representing an interesting tourist attraction, IRS will be able to generate assured cash inflow, which provides for the Project's sustainability.

The Project is expected to be completed by the end of 2012.



Fig. 4 Route Itinerarium Romanum Serbiae  
Source: Archaeological Institute Belgrade

## 2. DESCRIPTION OF LOCATIONS AND ANALYSIS OF PLANNED ACTIONS TO BE IMPLEMENTED

### 2.1 Introduction

Eighteen Roman emperors were born in the current territory of Serbia. That is nearly a quarter of all Roman emperors from the Roman Empire territory of the period from the 1<sup>st</sup> to the 6<sup>th</sup> century. To date, this fact has been neglected by Serbian and western European historiography, with their disregard for its importance and usefulness. In the context of scientific content, cultural inheritance and tourism, it represents a worldwide brand. Eighteen Roman emperors is not just an incredible number, but they helped overcome a crisis and gave the Roman Empire a new energy from the 3<sup>rd</sup> (when the Roman Empire entered its crisis) until the 5<sup>th</sup> century. Constantine the Great, born in Niš, was certainly one of the most influential Roman emperors. He helped the Roman Empire enter a new period in which a new progressive civilisation emerged. In 313 A.D. in Milan, Constantine issued the famous Edict of Milan, whereby Christians became equal to other citizens of the Roman Empire. Europe and the world formally celebrated the 1,700<sup>th</sup> anniversary of the Edict of Milan in 2013. Predictably during this year Serbia, and in particular Niš, was expected to represent one of the main visitor locations, not only in the region, but in Europe as well.

Bearing these facts in mind, the opportunity to connect all the towns and cities where the Roman Emperors were born, and to form one unified route arose as a logical solution. For these reasons, this archaeological, cultural and tourist route was named “*Itinerarium Romanum Serbiae* (IRS)” or “On Serbian roads of Roman emperors”. The route is over 600 km long and connects nearly the whole of the Serbian territory, stretching from north to south, from Sremska Mitrovica (*Sirmium*), Belgrade (*Singidumum*), Kostolac

(*Viminacium*), to Djerdap, *Tabula Traiana* and Trajan’s Bridge (Kladovo), Šarkamen (Negotin), Gamzigrad near Zaječar (*Felix Romuliana*), Niš (*Naissus et Mediana*) and Caričin Grad near Lebane (*Iustiniana Prima*). Apart from these Roman cities, exceptional archaeological finds from other periods are also located on this route: Vinča (Neolithic), Ram and Golubac (Middle Ages), Lepenski Vir (Mesolithic), Diana (Rome and Paleobyzantine), Paraćin (Neolithic), Hisar kod Leskovca (Copper and Iron Age) and Kale Krševica near Bujanovac (Hellenism).

The connection of these locations has two overlapping goals:

1. Popularisation of archaeological science,
2. Economic profit based on the presentation of archaeological findings.

The example of Turkey, which has invested heavily in the archaeological exploration of sites from the Greek and Roman period during the past ten years proves that this could be realised in a very short period of time and be both successful and economically sustainable. In addition to Turkey, Hungary, Austria and Slovakia are hastily working on projects of Roman limes in their own territories and intend to proclaim them as world cultural heritage sites.

The route of *Itinerarium Romanum Serbiae* (IRS), or On Serbian roads of Roman emperors, could and should realise its strong economic potential which has the capacity to attract over 200,000 international visitors. The idea is to create, by connecting these locations, a single chain of archaeological finds. In this way, each site could be visited by each of the route’s visitors.

An extremely important fact is that IRS runs alongside the Danube. More than 600 large, luxurious tour ships travel the Danube, carrying between them over 250,000 tourists. Many of these ships, starting from Rotterdam, Regensburg, Vienna and Passau and sailing to the Danube Delta, stop in Novi Sad, Belgrade and *Viminacium*. Using detailed research of these tourists, findings related to their national heritage, age structure, ed-



ucational level and for how long they used toilet facilities (not as bizarre as it might sound given the need for projections of the number of such facilities required) were gathered. Around 50% of tourists come from Germany, Austria and Switzerland, 30% from the USA, 10% from France, 4% from Japan, and 6% from other countries. It is notable that the number of Japanese tourists is expanding and that their interest in the Roman culture of this area is growing.

Another extremely important parameter, which points to the importance and profitability of this route, is the amount of visitors to archaeological locations.

Each of these locations should be accessible and with certain necessary service quality standards:

1. To operate throughout the year,
2. To enable the visit of tourists regardless of the weather (covered and protected),
3. To incorporate professional guide services with at least one English speaking guide,
4. To have a constant maintenance service,
5. To facilitate adequate sanitary facilities with at least 10 toilets,
6. To incorporate a gift shop with specific souvenirs.

Some locations, such as *Sirmium*, *Viminacium*, *Lepeski Vir* and *Felix Romuliana*, already possess the necessary infrastructure and can accommodate the aforementioned number of 250,000 tourists. At *Viminacium*, a tavern was

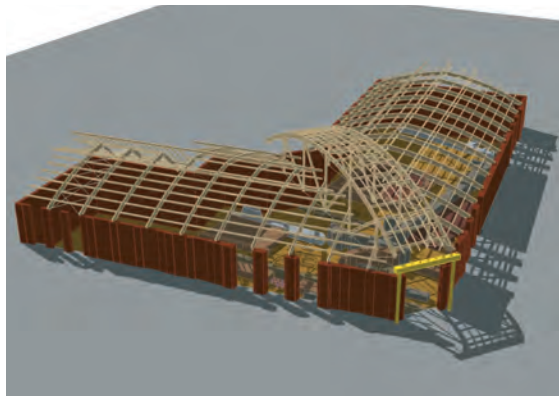


Fig. 5 Sirmium - Protective construction above the imperial palace

built which can host 205 guests, with an air-conditioned sanitary facility housing 13 toilets. Also at this location is a gift shop (150m<sup>2</sup> in size) where visitors can choose from 700 different souvenirs. Some archaeological locations are already covered and protected (*Sirmium*, *Lepeski Vir* and *Viminacium*), however, over the next two years, the same protection should be provided at other locations (*Mediana* near Niš, *Kale Krševica* and *Drenovac*), or these locations should be differently presented, as at *Iustiniana Prima* and *Hisar*.

On the IRS route, visitor centres should be constructed. One such multipurpose building which, along with others, represents one of the science popularisation centres of the Braničevo district, is *Domvs Scientiarvm Viminacium*, in the archaeological park at *Viminacium*. This object has an area of over 4,500m<sup>2</sup> and is designed in the form of a Roman villa with five atriums. The construction started at the beginning of 2008 and, to date, the roof structure has been completed. Its purpose is to accommodate researchers, tourists and devotees of archaeology from both home and abroad. It will incorporate a museum, a library, a laboratory, a research area, accommodation for nearly 130 guests, a dining room and Roman *thermae*.

One third of DOMVS is intended for researchers from Serbia and other parts of the world (rooms have already been secured by researchers from the universities of Bologna, Ancona, Aquileia and Munich). An agreement was reached with Munich's leading laboratory allowing DOMVS to become their SEE unit for strontium analysis, based on which the heritage of citizens from the entire territory of the Roman Empire can be determined. The next third houses a museum, where the rich archaeological material from the necropolis excavation of *Viminacium* will be exhibited. Over 14,000 graves with over 50,000 items, out of which 1,000 are gold or silver, were found at the *Viminacium* necropolis. This is the largest necropolis of the Roman Empire so far researched. The last third is intended for tourists who want to



Fig. 5 Reconstruction of Sirmium  
(drawing according to M. Jeremić)

be a part of the archaeological excavations. This represents a novelty at Serbian archaeological locations, yet it is increasingly becoming a common practise elsewhere in the world. The model for archaeological excavation enthusiasts is present in areas such as Italy, England, Germany, and countries in South and Middle America. These enthusiasts often retired and full of enthusiasm to fulfil a lifelong dream of familiarising themselves with archaeology can, for between €8,000 and €12,000, enjoy a two week stay at an archaeological location.

The goal is to establish this route in the next two years and to complete it by the end of 2012. The IRS route should be connected with other parts of the Roman Empire and discussions with colleagues from *Aquileia*, Italy (northern Italy), *Emona*, Slovenia, Croatia, *Vindobona* and *Carnuntum* and Austria (near Vienna), as well as those from Romania, Hungary, Bulgaria and Macedonia, have already been started, with a plan to completely functionalise the Roman road network and to build a Roman *mansion* (a type of tavern) and a *mutacio* (serving as accommodation



Fig. 6 Sirmium- Monumental sun clock

<b>Geophysical exploration</b>	<b>471,900</b>
Geomagnetic research	72,800
Resistivity method “twin”	117,000
GPR research	145,600
GPS positioning and linking of data with GIS	18,200
3D scanning and 3D terrain models production of those archeological sites	75,400
Transport costs, accommodation costs and handling costs	42,900
<b>Coverage of archeological objects</b>	<b>793,800</b>
Roman amphitheater (m <sup>2</sup> )	604,800
Roman aqueduct (m <sup>2</sup> )	189,000
<b>Continued construction of scientific-research center for Roman Archaeology “DOMUS SCIENTIARUM VIMINACIUM”</b>	<b>2,799,077</b>
Building trades construction works	2,042,887
Doorman’s room	0
Tavern	0
Mausoleum	0
Swimming pool	0
Sanitary facilities	0
Heating water pump	1.178,351
Wiring	164,907
Telecommunications	22,985
Mechanical installations	161,066
Infrastructure	248,281
Parking	0
Horticulture	0
Furniture and equipment	15,600
Museum - Mosaic	165,000
Roman emperors head	0
<b>Site presentation</b>	<b>14,000</b>
<b>Other costs</b>	<b>262,451</b>
Preparation of project documentation	74,986
Supervision	37,493
Other costs (unexpected costs - archeological ...)	149,972
<b>Total costs</b>	<b>4,341,228</b>

Table 3 *Viminacium* – Preliminary Estimation of Investments, in €  
Source: Archaeological Institute Belgrade

for horses and postal carriages). Recognising the importance of this route, the EU has already granted the project “*Aquillea-Emona-Viminacium*” the sum of €183,000.

Characteristics of the sites are presented further in the text.

## 2.2 Sirmium

*Sirmium* was one of the imperial and most important cities in Serbia during ancient times, being a legionary camp, one of the four imperial cities, as well as a diocesan centre. It was originally the administrative centre of the province of Lower Pannonia (*Pannonia Inferior*) and, following Diocletian’s administrative reforms, it became the centre of Second Pannonia (*Pannonia Secunda*). From 324 AD onwards, it became the seat of the Illyrian diocese of the great prefecture of *Italia Africa Illyricum*. The original settlement was set up on the territory of the autochthonous tribes, the Sirmians and the Amantines (*civitas Sirmiensis et Amantinorum*). During Flavius’ or, most likely, Domitianus’s reign (81-96 AD), *Sirmium* gained the status of a colony. There are epigraphic records of *Sirmium* as *Flavia Sirmium, colonia Sirmium, Sirmensium or Sirmiensi-um*. The importance of the city of *Sirmium* can be confirmed by the fact that it has been mentioned

as the place where *Marcus Aurelius* died and also the place where he had an imperial palace. Additionally, *Maximinus* of Thrace, he usurpers *Ingenius* and *Regulianus*, as well as *Aurelian*, *Probus* and *Claudius Gothicus*, *Galerius*, and *Licinius* stayed in *Sirmium* for some period of time. It is a well known fact that Constantine the Great expelled *Licinius* from this city in October 314 AD. *Sirmium* developed rapidly, primarily thanks to its waterways, although the land routes leading from the West to the East also ran directly through this area. *Sirmium* was founded at the intersection of several communication lines. One of the most important was the route starting in *Aquila* in northern Italy and called *Via Militaris*.

Total investment for this archaeological site is estimated at €331,000 and refers to activities related to the presentation of the site.

## 2.3 Viminacium

*Viminacium* was the capital of the province of Upper Moesia (*Moesia Superior*), subsequently First Moesia (*Moesia Prima*), and the permanent camp of the Seventh Claudia Legion (*VII Claudia Pia Fidelis*). Based on the most recent archaeological findings, it is estimated that the military camp was probably set up in the first decades of the 1<sup>st</sup> century AD. Stereoscopic analysis and the

<b>Construction of terrace and access stairs</b>	<b>76,219</b>
Construction of terrace around table	31,500
Construction of access stairs	44,719
<b>Conservation of the table</b>	<b>240,000</b>
<b>Site presentation</b>	<b>264,328</b>
<b>Other costs</b>	<b>25,547</b>
Preparation of project documentation	7,861
Supervision	1,965
Other costs (unexpected costs - archeological ...)	15,721
<b>Total costs</b>	<b>606,093</b>

Table 4 *Tabula Traiana* – Preliminary Estimation of Investment, in €  
Source: Archaeological Institute Belgrade



Fig. 7 Viminacium, *Domus Scientiarum Viminacium*, aerial view



Fig. 8 Viminacium, *Domus Scientiarum Viminacium*, central peristyle



Fig. 9 *Tabula Traiana*, imperial tablet celebrating building of the limes road in the Iron Gate



Fig. 10 Iron Gate, remaining part of the Roman road

digital soil samples indicate that the original camp (*castrum*) was twice the size of a camp normally considered to be billeting for the 7<sup>th</sup> Claudia Legion. This is unequivocal proof that, immediately after it was created, *Viminacium* was the base for two legions. During the rule of Hadrian, this civilian settlement was granted the status of a municipality (*municipium*), however, the discovery of the *thermae* indicate that life in this city was

already very dynamic at the time of Domitian (81-96 AD). The *municipium* status also implied civilian administration. During the reign of *Gordian III* (238-244 AD), it became a colony (*colonia*) of Roman citizens and was given the right to mint its own local currency.

The fact that *Viminacium* is located in the furrows, among the fields, and that there is no modern settlement built over the Roman ruins,



Fig. 11 Iron Gate, 19<sup>th</sup> century lithograph by W.H. Bartlet



Fig. 12 Iron Gate, 19<sup>th</sup> century lithograph by W.H. Bartlet

<b>Geophysical exploration</b>	<b>43,540</b>
Geomagnetic research	6,720
Resistivity method “twin”	10,800
GPR research	13,440
GPS positioning and linking of data with GIS	1,680
3D scanning and 3D terrain models production of those archeological sites	6,960
Transport costs, accommodation costs and handling costs	3,940
<b>Archeological exploration</b>	<b>27,000</b>
<b>Reconstruction of the Trajan’s bridge</b>	<b>480,000</b>
<b>Trajan’s bridge models in the length of 30 m (m)</b>	<b>1.640,000</b>
<b>Site presentation</b>	<b>15,000</b>
<b>Other costs</b>	<b>101,751</b>
Preparation of project documentation	31,308
Supervision	7,827
Other costs (unexpected costs - archeological ...)	62,616
<b>Total costs</b>	<b>2,307,291</b>

Table 5 Trajan’s Bridge – Preliminary Estimation of Investment, in €  
Source: Archaeological Institute Belgrade

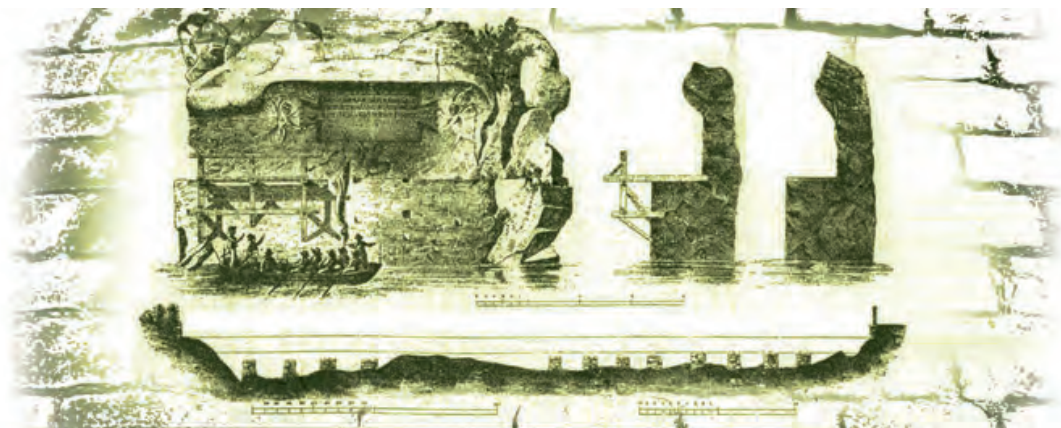


Fig. 13 Roman road through the Iron Gate (drawing by P. Vašarheli)

<b>Holographic view of Trajan’s bridge over the Danube</b>	<b>360,000</b>
Color laser projector	900,000
Water jet system	370,000
Infrastructure and construction works	90,000
<b>Total costs</b>	<b>1.260,000</b>

Table 6 Holographic View of Trajan’s Bridge over the Danube.  
Preliminary Estimation of Investments, in €  
Source: Archaeological Institute Belgrade

<b>Geophysical exploration</b>	<b>79,170</b>
Geomagnetic research	12,040
Resistivity method “twin”	19,350
GPR research	24,080
GPS positioning and linking of data with GIS	3,010
3D scanning and 3D terrain models production of those archeological sites	12,470
Transport costs, accommodation costs and handling costs	8,220
<b>Coverage of residential and memorial quarter (m<sup>2</sup>)</b>	<b>562,124</b>
<b>Site presentation</b>	<b>14,000</b>
<b>Other costs</b>	<b>23,536</b>
Preparation of project documentation	7,242
Supervision	1,810
Other costs (unexpected costs - archeological ...)	14,484
<b>Total costs</b>	<b>678,830</b>

Table 7 Šarkamen – Preliminary Estimation of Investment, in €  
Source: Archaeological Institute Belgrade

provides a unique opportunity to learn about all aspects of life in ancient times.

The *Viminacium* Scientific-Research Centre (*Domus Scientiarium*) was designed as a multi-purpose facility. Apart from the fact that scientists from Serbia and abroad will use its studies,

libraries and atria for research, workshops will be held for students and summer schools conferences and topical meetings will be organised, it will also serve to accommodate tourists who show an increasing interest in visiting *Viminacium*.

Total investment for this archaeological site



Fig. 14 Roman road in the Iron Gate (litograph by G. Hering)



<b>Geophysical exploration</b>	<b>139,920</b>
Geomagnetic research	21,000
Resistivity method “twin”	33,750
GPR research	42,000
GPS positioning and linking of data with GIS	5,250
3D scanning and 3D terrain models production of those archeological sites	21,750
Transport costs, accommodation costs and handling costs	16,170
<b>Coverage of Constantine’s villa (m<sup>2</sup>)</b>	<b>186,000</b>
<b>Constantine’s portal in bronze (art work that won at contest)</b>	<b>590,361</b>
<b>Site presentation</b>	<b>9,000</b>
<b>Other costs</b>	<b>90,090</b>
Preparation of project documentation	27,720
Supervision	6,930
Other costs (unexpected costs - archeological ...)	55,440
<b>Total costs</b>	<b>1,015,371</b>

Table 8 *Mediana et Naissus* – Preliminary Estimation of Investment, in €  
Source: Archaeological Institute Belgrade

is estimated at €6,541,000 and refers to the construction of the scientific-research centre and the coverage of the Roman amphitheatre and Roman aqueduct.

#### 2.4 *Tabula Traiana*

*Tabula Traiana* is a Roman inscription dedicated to the Roman Emperor Trajan, placed on carved rock above the Iron Gates gorge. It is part of the ensemble of Roman monuments on the Roman route that encompass the remains of the bridge built by Trajan over the Danube. These monuments date back to Trajan’s expedition against the Dacians, 100-103 AD. The bridge was built as a supply route on a military road.

These events were immortalised in scenes depicted in the lower part of the Trajan column in Rome. The bridge was a wooden construction with brick pillars, which is the typical technology of that time. Trajan also regulated the flow of Danube, caused by the rapids and, until then, considered impossible to navigate.

Total investment for this archaeological site is estimated at €406,000.

#### 2.5 *Trajan’s Bridge*

During his elaborate preparations for the second Dacian War, Emperor Trajan undertook a number of construction works, of which probably the most imposing one was the construction of a bridge on the Danube, downstream from Kladovo near the village of Kostol. Access to the bridge was protected by two fortifications: *Pontes* (on the right bank of Danube) and *Drobeta* (on the left bank). The architect *Apolodorus of Damascus* managed to span the river using twenty stone pillars. It was built between 103 and 105 AD. It was 1,127 meters long, placed on 20 pillars spaced at 50-meters intervals. Being that long and over the turbulent waters of this river, it is one of the biggest bridges built in ancient times. However, the most recent excavations have led to the interesting assumption that there were, in fact, two bridges. The smaller one was situated on the right bank

<b>Geophysical exploration</b>	<b>7,200</b>
GPS positioning and linking of data with GIS	1,400
3D scanning and 3D terrain models production of those archeological sites	5,800
<b>Archeological exploration</b>	<b>25,000</b>
<b>Construction of centre for visitors (type 3) (m<sup>2</sup>)</b>	<b>276,250</b>
<b>Site presentation</b>	<b>9,000</b>
<b>Other costs</b>	<b>20,166</b>
Preparation of project documentation	6,205
Supervision	1,551
Other costs (unexpected costs - archeological ...)	12,410
<b>Total costs</b>	<b>338,616</b>

Table 9 *Diana* – Preliminary Estimation of Investment, in €  
Source: Archaeological Institute Belgrade

of the Danube, spanning the Sopian Canal, which was also built at the time of Trajan. Even the very name *Pontes*, the form meaning bridges in the plural, supports such an interpretation. The best resource for investigating this bridge is Trajan's Column in Rome which details the outline of such an incredible structure.

Total investment for this archaeological site is estimated at €1,667,000, out of which €1,307,000 is for the reconstruction of Trajan's bridge and model construction, and €360,000 is for a holographic view of Trajan's bridge over the Danube.

## 2.6 Šarkamen

Šarkamen is an ancient Late Roman residential and memorial site. It is situated approximately 25km west of Negotin, in a narrow and closed valley called Vrelo, in a remote area away from any communication lines, trade routes and any traces of modern life. The name Vrelo is derived from the name of the river Vrelo, which emerges from a nearby cave. The entire area, consisting of a narrow valley created by the river Vrelo, from its source up to the village also named after the river, is known as Šarkamen. A simplified



Fig. 15 Trajan's Bridge (drawing by A. Marsigli)

<b>Geophysical exploration</b>	<b>43,540</b>
Geomagnetic research	6,720
Resistivity method “twin”	10,800
GPR research	13,440
GPS positioning and linking of data with GIS	1,680
3D scanning and 3D terrain models production of those archeological sites	6,960
Transport costs, accommodation costs and handling costs	3,940
<b>Cover construction over research area (m<sup>2</sup>)</b>	<b>189,000</b>
<b>Site presentation</b>	<b>13,000</b>
<b>Other costs</b>	<b>15,106</b>
Preparation of project documentation	4,648
Supervision	1,162
Other costs (unexpected costs - archeological ...)	9,296
<b>Total costs</b>	<b>260,646</b>

Table 10 Kale-Krševica – Preliminary Estimation of Investment, in €  
Source: Archaeological Institute Belgrade

version of Kanitz’s statement that Šarkamen was a Roman *castrum* protecting the road between Prahovo (*Aquae*) and Donji Milanovac (*Taliata*), actually survived until the start of systemic excavations in 1994 when the explorations were taken over by Professor Dragoslav Srejsović. In a space

of 500 m by 300 m, there are five architectural cores, which have only been partially defined: the fortification, memorial grounds, a large representative building, a barn and bridge.

Total investment for this archaeological site is estimated at €479,000.



Fig. 16 Šarkamen, golden jewelry from the imperial mausoleum

<b>Geophysical exploration</b>	<b>9,492</b>
GPS positioning and linking of data with GIS	1,680
3D scanning and 3D terrain models production of those archeological sites	6,960
Transport costs, accommodation costs and handling costs	852
<b>Cover construction over the part of settlement (m<sup>2</sup>)</b>	<b>378,000</b>
<b>Construction of visitors centre for prehistorically archeology (m<sup>2</sup>) – type 2</b>	<b>399,750</b>
<b>Site presentation</b>	<b>10,000</b>
<b>Other costs</b>	<b>50,543</b>
Preparation of project documentation	15,555
Supervision	3,888
Other costs (unexpected costs - archeological ...)	31,100
<b>Total costs</b>	<b>847,785</b>

Table 11 Drenovac - Preliminary Estimation of Investment, in €  
Source: Archaeological Institute Belgrade

## 2.7 *Mediana et Naissus*

*Naissus* is an important Roman and early Byzantine city which was on the site of what is today the city of Niš. Later fortifications and the present-day settlement have almost completely destroyed the remnants of this ancient city. The Romans inhabited the area of the city as early as the 1<sup>st</sup> century AD after they defeated the Darda-

nians. It's location on an important commercial route conditioned its rapid economic development, which was particularly evident in the 4<sup>th</sup> century AD, when it was home to a workshop for the manufacture of arms and a workshop for making silverware. Of particular interest are its findings, such as a bronze bust of Emperor Constantine, a statue of the emperor seated on a throne and a store containing silver plates made to celebrate



Fig. 17 *Mediana*, Archaeological Park



Fig. 18 *Iustiniana Prima, Basilica*

the tenth anniversary of Licinius's reign.

Total investment for this archaeological site is estimated at €2,015,000 and is mainly related to the coverage of Constantine's villa.

## 2.8 *Iustiniana Prima*

Caričin Grad or *Iustiniana Prima*, as it was referred to in the paleo-Byzantine age, is known as one of the most important Byzantine cities in

the Balkan Peninsula. Tsar (Emperor) *Iustinian I*, whose origins are related to the highlands of southern Serbia, decided to build a city in his homeland that would glorify his name. It is situated not far from Lebane, near Leskovac, in the hills away from major roads.

Total investment for this archaeological site is estimated at €17,000 and relates to activities connected with the presentation of the site.



Fig. 19 *Iustiniana Prima*,  
3D Reconstruction by Č. Vasić



Fig. 20 *Iustiniana Prima*,  
3D Reconstruction by Č. Vasić



Fig. 21 *Diana* fort, South Gate



Fig. 22 *Diana* fort, Building with hypocaust

	<b>2010</b>
<i>Sirmium</i>	7,000
<i>Viminacium</i>	70,000
<i>Tabula Traiana</i>	500
Trajan's Bridge	1,000
Šarkamen	1,000
<i>Mediana et Naissus</i>	5,000
<i>Iustinana Prima</i>	3,000
Kale-Krševica	2,000
Drenovac	1,000
<b>Total</b>	<b>90,500</b>

Table 12 Number of Visitors of IRS, 2013  
Source: Archaeological Institute Belgrade

### 2.9 Diana

*Diana* is one of the most important auxiliary forts situated on the right bank of Danube. It is an extremely well preserved camp dating from between the 1<sup>st</sup> and 6<sup>th</sup> centuries AD that protected the Roman and early Byzantine channel, a safe

detour around the treacherous Danube cataracts of the area. Together with the Archaeological Museum of the Iron Gate in Kladovo, this is one of the most interesting sites along the route.

Total investment for this archaeological site is estimated at €337,616 and relates to the construction of a visitors' centre.



Fig. 23 *Diana* and *Pontes*, ideal reconstruction of the complex (drawing by M. Korać)

	2014p	2015p	2016p	2017p	2018p
No of visitors, in 000	130	190	210	230	250
<i>Viminacium</i>	90	120	130	140	150
Other	40	70	80	90	100
Ticket price, in EUR	3.4	3.3	3.2	3.2	3.2
<i>Viminacium</i>	4.0	4.0	4.0	4.0	4.0
Other	2.0	2.0	2.0	2.0	2.0
<b>Ticket revenues</b>	<b>440</b>	<b>620</b>	<b>680</b>	<b>740</b>	<b>800</b>
<i>Viminacium</i>	360	480	520	560	600
Other	80	140	160	180	200
No of souvenir buyers, in 000	65	95	105	115	125
<i>Viminacium</i>	45	60	65	70	75
Other	20	35	40	45	50
Souvenir price, in EUR	0.5	0.5	0.5	0.5	0.5
<i>Viminacium</i>	3.5	3.5	3.5	3.5	3.5
Other	2.5	2.5	2.5	2.5	2.5
<b>Souvenir revenues</b>	<b>208</b>	<b>298</b>	<b>328</b>	<b>358</b>	<b>388</b>
<i>Viminacium</i>	158	210	228	245	263
Other	50	88	100	113	125
<b>Total direct revenues</b>	<b>648</b>	<b>918</b>	<b>1,008</b>	<b>1,098</b>	<b>1,188</b>

Table 13 Revenues Calculation, in €000  
Source: Archaeological Institute Belgrade

### 2.10 Kale Krševica

Kale-Krševica is an Ancient Greek archaeological site of more than 4 hectares. So far, around 1,000 squares of a former fortified town in the hills of Krševica overlooking Bujanovac and Vranje, to the south of Ristovac in southern Serbia have been excavated. It has a history reaching back to the 13<sup>th</sup> century BC, as a settlement with elements of an acropolis. However, the main preserved characteristics are from a Greek-Mediterranean style urban town in the 5<sup>th</sup> or 4<sup>th</sup> century BC (Bronze Age) with stone walls and a necropolis. Findings of coins of Philip II, Alexander III, Cassander, Demetrios Poliorketes and Pelagia correspond, in general, to the chronological span of the archaeological material discovered in the course of excavations and it may be considered

the northernmost Ancient Macedonian city. The Paeonian tribe of Agrianes dwelt in this region. The Scordisci are believed to have razed the town to the ground in 279 BC. The town had at least 3,000 inhabitants in the 3<sup>rd</sup> and 4<sup>th</sup> century.

The town had an exceptionally strategic position on a plateau that descends from Mt Rujan towards South Morava and the Vranje valley. On the slopes of the plateau there is a village where houses are often built using stone blocks from the ancient settlement. The town's acropolis and suburban area encompasses 4 hectares, extending to the valley of the river Krševicka.

Total investment for this archaeological site is estimated at €61,000 and relates to archaeological research and activities connected with the presentation of the site, as well as the coverage of the research area.





Fig. 24 Kale-Krševica, planed protective construction

### 2.11 Hisar

The archaeological site at Hisar hill, near the Serbian town of Leskovac, where there have been settlements present from the Neolithic, Copper and Bronze Age, Roman and Byzantine times, is one of the richest locations in Serbia in terms of archaeological material.

What makes Hisar particularly interesting is evidence that, as far back as the period between the 1350 and 1100 BC, a centre for ferrous metallurgy existed, making it one of the oldest in Europe. Also, extensive proof of the developed metallurgical industry is present: ovens, blowers, tanks for the production of charcoal, iron ore, and objects that were produced here.

These findings completely integrate the theory of the migration of people in the period between the 13<sup>th</sup> and 12<sup>th</sup> centuries BC, according to

which the Dorians moved from the north, completely changing the ethnic makeup of the Balkans. Significant archaeological material from the Byzantine period has been found at Hisar, more specifically from the period when Stefan Nemanja expanded the state into the South Morava River basin.

The total area of Hisar is 130 hectares. To date, only 20 hectares have been investigated.

Total investment for this archaeological site is estimated at €28,000 and relates to activities connected with the presentation of the site.

### 2.12 Drenovac

Drenovac is an archaeological site from the Neolithic period. The site is located near the Serbian town of Paraćin, and dates back to the sev-

	2015			2016			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Feasibility study							
Financial affordability analysis							
Project implementation							

Table 14 Proposed Project Timeline  
Source: Archaeological Institute Belgrade

enth millennium BC.

Total investment for this archaeological site is estimated at €348,000.

### 3. BUDGET ESTIMATION

The preliminary calculation of the budget for the implementation of the Project is based on estimates by relevant experts from the Archaeological Institute. Costs for the reconstruction of all archaeological sites are calculated separately, while total costs are estimated at €13,723,465.

The IRS development project is intended to be financed within the scope of the general project for revitalising public research and development, as a separate project sub-component of the €200 million finance contract signed on March 4<sup>th</sup> 2010, between the Republic of Serbia and the EIB. The total project cost, as laid out in the agreement, is €420.8 million and the EIB has committed to €200 million, while other sources should be the Republic of Serbia and EU funds.

### 4. EXPECTED RESULTS AND ECONOMIC EFFECTS OF THE PROJECT

Implementation of the Project will have multiple effects on both the promotion of science and research in archaeological sites and the promotion of Serbia as a cultural and tourist destination, particularly in the light of the celebration of the 1,700<sup>th</sup> anniversary of the Edict of Milan.

Implementation of the Project should result

in:

- IRS encouraging further archaeological research and archaeological science development
- IRS contributing to the economic development of municipalities where archaeological sites are located, resulting in multiple positive effects of the Project implementation
- IRS promotion of Serbia as an attractive scientific, cultural and tourist destination
- IRS offering a favourable social environment for alternative methods of education – the possibility to provide lectures in an interesting environment and new possibilities for social interaction
- IRS offering significant support for primary and secondary education – excursions and study visits can transform traditional methods in the Serbian education system and promote archaeological science to young generations

Unlike other sub-projects within the EIB funding, IRS should be economically sustainable. *The route of Roman emperors could represent strong economic potential, with approximately 200,000 visitors annually.* Thus, the modernisation and reconstruction of the archaeological sites will enable the generation of revenues from these sites. The main source of revenues is expected from ticket and souvenir sales, while other revenues could come from restaurant income as well as from the rental of conference halls and lecture rooms.

Revenue projections are based on the ex-

pected increase in the number of visitors and their spending on tickets and souvenirs. A very important fact is that the route of Roman emperors largely coincides with the river Danube. Around 600 large, luxury boats, with around 250,000 tourists, cruise the Danube annually, which represents a huge potential tourist market for these archaeological sites.

Relevant domestic and international experience suggests that such attractions could attract the planned 250,000 visitors per year. Projected sales of tickets and souvenirs could generate an income of cca €1.2 million by 2016.

Projected cash outflow is lower than cash inflow; excess cash could be used for further archaeological research and site development. It is obvious that the Project is not highly profitable, but it could generate enough cash to sustain itself in the future.

Apart from self sustainability, the Project implementation could have a solid impact on regional economic development. This particularly arises from the fact that almost all investments are intended for sites in municipalities with unemployment rates higher than the Serbian national average.

## 5. OTHER RELEVANT ISSUES

Upon the preliminary acceptance of the Project, the following further steps will be taken:

- feasibility study;
- financial affordability analysis including a presentation of a detailed budget and financial plan;
- Project implementation.

The Project is expected to be completed by the end of 2012.

## REZIME

### PRELIMINARNA STUDIJA - ITINERARIUM ROMANUM SERBIAE

**Ključne reči:** Domus Scientiarum Viminacium, Sirmijum, Vinča, Viminacijum, Lepenski Vir, Golubac, Ram, Pontes, Trajanov most, Trajanov put, Dijana, Feliks Romulijana, Šarkamen, Mora Vagei, Naissus, Justinijana Prima, IRS, Put rimskih imperatora, Srbija, Rim, Mezolit, Neolit, Srednji vek, Tvrđave, Kastum.

Ključna zamisao idejnog tvorca projekta nazvanog Putevima rimskih imperatora, odnosno Itinerarium Romanum Serbiae (IRS), dr Miomira Koraća sa Arheološkog Instituta iz Beograda, još 1996. godine bila je da unapredi i modernizuje postojeću infrastrukturu i druge objekte na putu rimskih imperatora kojim bi se omogućilo sledeće:

- povezivanje svih naučno-kulturnih projekata i puteva vezanih za rimsku arheologiju i rimske imperatore, kako u Srbiji, tako i, ako je moguće, na regionalnom nivou;
- jačanje baze za dalja arheološko-naučna istraživanja uključujući promociju nauke;
- šansa za dalji razvoj turizma u Srbiji.

To bi se postiglo standardizacijom arheoloških lokaliteta duž ove rimske rute koja bi uključivala 5 osnovnih elemenata:

1. Da svaki od lokaliteta duž ove rute bude celodnevno otvoren i to 354/5 dana u godini i da ne radi samo 1. januara.
2. Da ima bar jedan pokriveni objekat kako funkcionisanje lokaliteta ne bi zavisilo od vremenskih uslova (kiša, sneg, sunce, vetar).
3. Da ima stalnog bar jednog vodiča koji govori engleski (podrazumevajući da srpski jezik zna).
4. Da ima suvenirnicu i tavernu gde turisti mogu da kupe primerene suvenire i da se osveže.
5. Da ima sanitarni čvor sa najmanje 10 mesta.

Standardizacija ovih rimskih lokaliteta, odnosno rimskih carskih gradova na IRS-u, omogućila bi posetu bar 300.000 posetilaca na godišnjem nivou uz oko 300 miliona evra obrtnih sredstava. Otvaranjem i standardizacijom ovih lokaliteta inostrani turisti bi dobili mogućnost da u Srbiji borave najmanje 10-tak dana. Samo sa teritorije Nemačke postoji zainteresovanost preko 400.000 visokoobrazovanih turista sklonih ovoj vrsti turizma.